- Actions that are under consideration in the event the U.S. Nuclear Regulatory Commission grants a license for the site. DOE would continue to evaluate these potential additional commitments. The analyses in the EIS do not take credit for these mitigations that may be decided on in the future.

In addition, DOE continues to evaluate additional measures to improve the long-term performance of the repository and to reduce uncertainties in estimates of performance. These measures include barriers to limit releases and transport of radionuclides, measures to control heat and moisture in the underground, and various designs to support operational considerations.

S.10 Unavoidable Adverse Impacts; Short-Term Uses and Long-Term Productivity; and Irreversible or Irretrievable Commitments of Resources

The construction, operation and monitoring, and eventual closure of the proposed Yucca Mountain Repository and the associated transportation of spent nuclear fuel and high-level radioactive waste would have the potential to produce some environmental impacts that DOE could not completely mitigate. Similarly, some aspects of the Proposed Action could affect the long-term productivity of the environment or would require the permanent use of some resources. For example:

- The permanent withdrawal of approximately 600 square kilometers (230 square miles) of land for the repository would be likely to prevent human use of the withdrawn lands for other purposes.

- Death or displacement of individual members of some animal species, including the desert tortoise, as a result of site clearing and vehicle traffic would be unavoidable.

- Injuries to workers or worker fatalities could result from facility construction, including accidents.

- Transportation of spent nuclear fuel and high-level radioactive waste would have the potential to affect workers and the public through exposure to radiation and vehicle emissions, and through traffic accidents.

Further, in the view of the Native American tribes in the Yucca Mountain region, the implementation of the proposed repository and its facilities would further degrade the environmental setting. Even after closure and reclamation, the presence of the repository would, from the perspective of Native Americans, result in an irreversible impact to traditional lands.

In addition, the Proposed Action would involve the following commitments of resources:

- Electric power, fossil fuels, and construction materials would be irreversibly committed to the project.

- DOE would use fossil fuel from the nationwide supply system to transport spent nuclear fuel and high-level radioactive waste to the repository.

S.11 Statutory and Other Applicable Requirements

Several statutes and regulations would apply to the licensing, development, operation, and closure of a geologic repository. These include the NWPA; the National Environmental Policy Act; the Atomic Energy Act; the Federal Land Policy and Management Act of 1976; site-specific public health and environmental radiation protection standards established by the Environmental Protection Agency; site-specific technical licensing regulations established by the Nuclear Regulatory Commission; and site

suitability guidelines established by DOE. DOE is also subject to environmental protection and transportation requirements such as those set by the Clean Air Act; Clean Water Act; Hazardous Material Transportation Act; Emergency Planning and Community Right-to-Know Act of 1986; Comprehensive Environmental Response, Compensation, and Liability Act; Resource Conservation and Recovery Act; National Historic Preservation Act; Archaeological Resources Protection Act; Endangered Species Act; Nuclear Regulatory Commission regulations applicable to the transportation of radioactive materials; U.S. Department of Transportation regulations governing the transportation of hazardous materials; and applicable Nevada State statutes and regulations. In accordance with several statutes, DOE would need several new permits, licenses, and approvals from both Federal and State agencies to construct, operate and monitor, and eventually close the proposed Yucca Mountain Repository.

Under the authority of the Atomic Energy Act, DOE is responsible for establishing a comprehensive health, safety, and environmental program for its activities and facilities. The Department has established a framework for managing its facilities through the promulgation of regulations and the issuance of DOE Orders. In general, DOE Orders set forth policies, programs, and procedures for implementing policies. Many DOE Orders contain specific requirements in the areas of radiation protection, nuclear safety and safeguards, and security of nuclear material. Because the Nuclear Regulatory Commission is authorized to license the proposed Yucca Mountain repository, DOE issued Order 250.1 exempting such a repository from compliance with provisions of DOE Orders that overlap or duplicate Nuclear Regulatory Commission licensing requirements.

DOE has interacted with agencies authorized to issue permits, licenses, and other regulatory approvals, as well as those responsible for protecting such significant resources as endangered species, wetlands, or historic properties. DOE also has coordinated with the affected units of local government, U.S. Nuclear Regulatory Commission, U.S. Air Force, U.S. Navy, U.S. Department of Agriculture, U.S. Department of Transportation, U.S. Environmental Protection Agency, Department of the Interior including its Bureaus (U.S. Fish and Wildlife Service, National Park Service, and Bureau of Land Management), the Council on Environmental Quality, Nevada Department of Transportation, and Native American tribes. In addition, DOE provided a copy of the Draft EIS and Supplement to the Draft EIS to these agencies and entities.

S.12 Conclusions

S.12.1 MAJOR CONCLUSIONS OF THE EIS

In general, the Proposed Action would cause small, short-term public health impacts due primarily to the transportation of spent nuclear fuel and high-level radioactive waste from the existing commercial and DOE sites to the proposed repository. The specific impacts at the repository site would be very small as indicated in Table S-1. The transportation impacts would be associated mainly with nonradiological traffic fatalities and very low radiological doses to members of the public from the routine transportation of radioactive materials.

The EIS analysis demonstrated that the long-term performance of the proposed repository over 10,000 years would result in a mean peak annual dose of 0.00002 millirem to a reasonably maximally exposed individual hypothetically located 18 kilometers (11 miles) from the repository. The analysis of a human intrusion event occurring at 30,000 years indicated a mean peak annual dose of 0.002 millirem to the reasonably maximally exposed individual at the same location.

As a result of this evaluation, DOE does not expect the repository to result in impacts to public health beyond those that could result from the prescribed radiation exposure and activity concentration limits in 40 CFR Part 197 and 10 CFR Part 63 during the 10,000-year period after closure.